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Relationship of Employment Barriers to Age of Vision Loss Onset

Anne Steverson, M.S.

The National Research and Training Center on Blindness & Low Vision
Mississippi State University

Author Note:

Anne Steverson, The National Research and Training Center on Blindness & Low Vision, Mississippi State University.

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Correspondence about this manuscript should be addressed to Anne Steverson, The National Research and Training Center on Blindness & Low Vision, P.O. Box 6189, Mississippi State, MS 39762. Phone: 662-325-2001 Fax: 662-325-8989 Email: acc155@msstate.edu

Abstract

This study examined the relationship between employment barriers and age of vision loss onset. Employment barriers reported were different based on age of vision loss onset. Service providers may want to structure services based on vision loss onset and the barriers experienced.

Relationship of Employment Barriers to Age of Vision Loss Onset

Barriers to employment for people with disabilities are well documented in literature and by the U.S. government (Lindsay, 2010; Nevala, Pehkonen, Koskela, Ruusuvoori, & Anttila, 2015; U. S. Department of Labor, Bureau of Labor Statistics, 2013). Some of the major barriers to employment reported by people with disabilities are employer discrimination (Lindsay, 2010; Nevala et al., 2015), lack of transportation (Lindsay, 2010; U.S. Department of Labor, Bureau of Labor Statistics, 2013), and lack of education or training (Loprest & Maag, 2007; U.S. Department of Labor, Bureau of Labor Statistics, 2013).

Employment barriers specific to people who are visually impaired (that is, those who are blind or have low vision) are also well-documented (Crudden, McBroom, Skinner, & Moore, 1998; Crudden, Sansing, & Butler, 2005; Dong, Warner, Mamboleo, Guerette, & Zalles, 2017; La Grow & Daye, 2005). Some of the major documented employment barriers for people with visual impairments are similar to what people with other disabilities experience: employer attitudes and discrimination (Crudden et al., 1998; Dong et al., 2017; McDonnall, Zhou, & Crudden, 2013) and lack of transportation (Crudden et al., 1998; La Grow & Daye, 2005; Rumrill, Roessler, Battersby-Longden, & Schuyler, 1998). However, some employment barriers are more specific to the visually impaired population such as lack of access to print (Crudden et al., 1998; Crudden et al., 2005; Rumrill et al., 1998). Even though research has investigated ways to mitigate some of these employment barriers including negative employer attitudes (McDonnall & Crudden, 2018) and transportation (Crudden, 2015; Crudden, McDonnall, & Hierholzer, 2015), they are still prevalent.

In addition to barriers to employment, researchers have examined predictors of employment for people with disabilities in general and people with visual impairments

specifically. One variable used to predict employment in studies focused on general disabilities (Loprest & Maag, 2007) and specific to visual impairment (Clements, Douglas, & Pavey, 2011; Cmar, McDonnall, & Crudden, 2018; La Grow & Daye, 2005) is age of disability onset.

However, there is no research on whether or not age of vision loss onset (referred to as vision loss onset hereafter) is related to the employment barriers experienced. People who experience vision loss early in life are potentially more confident and trained in skills related to blindness, such as orientation and mobility, reading braille, or using assistive technology, but may lack skills related to social interactions (Loprest & Maag, 2007) and job-related skills acquired with early work experiences (Connors, Curtis, Wall Emerson, & Dormitorio, 2014). Both of which are important to finding and maintaining employment. However, those who lose their vision later in life would be expected to have more job skills and social skills but may lack blindness-related skills.

Due to the lack of information about these factors, this study examined employment barriers by vision loss onset. The specific research questions were: (a) What are the major barriers overall among employees who are visually impaired? (b) What are the top barriers by employment status among employees who are visually impaired? and (c) Do employment barriers differ by vision loss onset?

Method

Data for this study is from a national transportation survey conducted by the National Research and Training Center (NRTC) on Blindness and Low Vision which included 492 participants from the United States who were age 18 or older. The national survey was administered at two time points to two separate participant groups, and the survey was revised for the second administration (Crudden, Cmar, & McDonnall, 2017; Crudden, McDonnall, and

Hierholzer, 2015). The first administration of this survey, which was from September to November 2013, included a question about barriers to employment. For more information about the development of the survey instruments and administration, see Crudden et al. (2017) and Crudden et al. (2015).

The sample for this study was limited to the 144 participants who received the question about employment barriers; the identified participants were demographically representative of the larger sample. Variables for this study included: age, vision loss onset, employment status, region, race/ethnicity, education level, living situation, vision level, read standard-sized print, progressive visual condition, types of barriers, and number of barriers. Employment barriers were identified from two specific survey questions in which participants could mark all applicable answers from a provided list: *Other than transportation, have you experienced any of the following barriers to being employed?* The second question asked about lack of transportation as a barrier to employment.

Participants in the original survey recorded their vision loss onset in years. For this study, the variable *vision loss onset* was divided into three categories: (a) early onset, which included participants who experienced onset from birth to three years old; (b) middle onset, which included participants with vision loss onset from ages 4 to 24 years; and (c) adult onset, which included participants with vision loss onset at age 25 years or older. The categories were chosen to look at the general phases of life: before school, during school, and after completion of education.

Descriptive statistics were used to summarize information related to demographics and overall reported barriers which address research questions a and b. Chi square and Fisher's Exact Test were used to investigate whether types of barriers differed based on vision loss onset.

Analysis of variance (ANOVA) and Tukey's honestly significant difference test were used to examine the relationship between the onset categories and the number of barriers experienced by participants. Both the Chi square and the ANOVA address research question c. All analyses were conducted in SAS Version 9.4.

Results

Participants ranged in age from 20 to 84 years old with an average age of 44.1 years ($SD = 12.9$). The average vision loss onset was 9.4 years ($SD = 14.3$) with a range from birth to 59 years. The number of years participants had experienced vision loss ranged from 2 years to 69 years with an average of 34.6 years ($SD = 14.3$). The majority of participants were in the early onset category (59.0%), followed by the middle onset category (25.0%), and the adult onset category (16.0%). Most (71.4%) of the participants indicated they had a progressive visual condition. A little over half of the participants were employed (52.5%), which included those who were self-employed. The remaining 47.5% of participants were not employed, which included participants who were unemployed, doing volunteer work only, or retired. Table 1 includes further demographic information about study participants.

The top four reported employment barriers experienced by participants were employer discrimination or negative attitudes (55.6%), lack of accommodations (46.5%), lack of transportation (45.8%), and lack of jobs (43.8%). The top four reported barriers differ slightly based on employment status. For the employed participants, the top four barriers were employer discrimination or negative attitudes (56.8%), lack of jobs (47.3%), lack of jobs with adequate pay (41.9%), and lack of accommodations (36.5%). For the unemployed participants, the most reported barriers were lack of transportation (62.7%), employer discrimination or negative attitudes (55.2%), lack of accommodations (55.2%), potential loss of disability benefits if

employed (47.8%), and lack of jobs (40.3%). Table 2 shows all the barriers and the percentage of participants who experienced those barriers overall and by employment status.

Table 3 presents results from the Chi-square analysis. There was a significant relationship between vision loss onset and the lack of skills or abilities to perform jobs ($X^2(2, N = 144) = 6.17, p = 0.04$). The effect size was small to medium ($\Phi = .21$). Participants in the early onset category were more likely than participants in the middle and adult onset categories to perceive a lack of skills or abilities to perform a job as a barrier.

Participants in the early onset category reported more total barriers ($M = 4.31, SD = 2.82$) than participants in the middle onset ($M = 3.11, SD = 2.05$) and adult onset categories ($M = 3.35, SD = 1.64$) ($F(2, 141) = 3.48, p = 0.03, \eta^2 = .05$). The follow up analysis indicated a significant difference in number of barriers between early onset and middle onset at $p = 0.04$ but no difference between early and adult onset categories ($p = 0.23$), or middle and adult onset categories ($p = 0.93$).

Discussion

The most common barriers to employment reported by participants were discrimination and employer attitudes, and lack of accommodations. Dong et al. (2017) suggest there may be a relationship between these two barriers, and that perceived negative employer attitudes may deter employees with visual impairments from seeking work accommodations. Employer discrimination and employer attitudes are continually identified as common barriers (see Crudden et al., 1998; Dong et al., 2017; McDonnall et al., 2013). However, several studies have been done to examine ways to address employer attitudes and knowledge about people with visual impairments (McDonnall & Crudden, 2018; McDonnall, O'Mally, & Crudden, 2014;

McDonnall, Zhou, & Crudden, 2013), to hopefully mitigate the negative employer attitudes barrier.

Lack of transportation continues to be a major barrier for people who are visually impaired. Crudden (2015) examined ideas for overcoming this particular barrier and encouraged orientation and mobility instructors to discuss with consumers potential transportation options. Additionally, with the growing number of transportation options, especially in the areas of ride-sharing and driverless cars, this barrier may not be as prevalent in the future.

Findings from the current study suggest that people who have early onset of vision loss experience more barriers. More people with early onset vision loss also identify the barrier *lack of skills or abilities to perform jobs* than those who experience onset of vision loss later in life. This supports the findings from Loprest and Maag (2007) and Connors et al. (2014) demonstrating that people who experience vision loss early in life may not have the opportunities to build job-related skills. At least one current research study is focused on an intervention to improve job search skills for youth with visual impairments (Cmar & McDonnall, 2018) which would lead to jobs and therefore, job skills. Additionally, the emphasis of pre-employment transition services from the Workforce Innovation and Opportunity Act (WIOA, 2016) has increased the focus for vocational rehabilitation agencies to provide specific services and programs that will build career-related skills for youth who experience vision loss early in life.

Although research is being conducted and policies have been put in place to mitigate employment barriers for people with visual impairments, it is not enough. Service providers play an important role in lessening employment barriers for people with visual impairments. In either early, middle, or late onset, the earlier that service provision can occur, the more potential there is for improving employment outcomes. In addition, if service providers are aware of the vision

loss onset and the differences in barriers experienced, they can focus service provision accordingly. However, service providers need to be aware of and utilize current research and policies in order to be as effective and efficient as possible.

One main limitation of this study is the over-representation of participants in the early onset category compared to the other groups. Other limitations of this study include that participants were only able to complete the survey electronically and variables of interest for analyses were limited in the dataset. Therefore, findings may not be representative of the larger population of people with visual impairments.

This was an initial exploration of employment barriers and vision loss onset. More research is needed to confirm these findings and explore potential interventions based on vision loss onset.

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Table 1
Participant Demographics

Variable	<i>n</i>	%
Region		
South	61	43.3
Midwest	28	19.9
West	28	19.9
Northeast	24	17.0
Race/Ethnicity		
White or Caucasian	110	76.4
Black or African American	12	8.3
Hispanic	7	4.9
Mixed or Multiracial	5	3.5
Asian	4	2.8
American Indian or Alaska Native	3	2.1
Choose not to answer	3	2.1
Education Level		
No high school diploma	1	0.7
High school graduate	11	7.8
Some college	33	23.4
Associate's degree	14	41.8
Bachelor's degree	39	27.7
Graduate or professional degree	43	30.5
Living Situation		
Lives alone	50	34.7
Lives with spouse or partner	65	45.1
Lives with children	8	5.6
Lives with family	26	18.1
Lives with roommates	9	6.3
Vision Level		
Totally blind	53	36.8
Legally blind	79	54.9
Less severe visual impairment	12	8.3
Can Read Standard-sized Print		
Yes, but only with assistive devices	29	31.9
Yes, without assistive devices	19	20.9
No, not even with assistive devices	43	47.3

Table 2

Number and Percentage of People Experiencing Each Barrier Overall and by Employment Status

Barrier	Overall (N = 144)		Employed (N = 74)		Unemployed (N = 67)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Employer discrimination or negative attitudes	80	55.6	42	56.8	37	55.2
Lack of accommodations	67	46.5	27	36.5	37	55.2
Lack of transportation	66	45.8	23	31.1	42	62.7
Lack of jobs	63	43.8	35	47.3	27	40.3
Lack of jobs with adequate pay	50	34.7	31	41.9	18	26.9
Potential loss of disability benefits if employed	50	34.7	17	23.0	32	47.8
Low expectations of vocational rehabilitation counselor	29	20.1	15	20.3	14	20.9
Difficulty with travel skills	29	20.1	16	21.6	13	19.4
Lack of needed vocational rehabilitation services	28	19.4	15	20.3	13	19.4
Disagreements with vocational rehabilitation counselor about vocational goals	24	16.7	13	17.6	10	14.9
Lack of skills or abilities to perform jobs	19	13.2	11	14.9	8	11.9
Lack of knowledge about how to find a job	14	9.7	11	14.9	3	4.5
Need to care for family members (e.g., children or aging adults)	14	9.7	4	5.4	9	13.4
Other	7	4.9	2	2.7	5	7.5
Have not experienced any barriers	15	10.4	12	16.2	3	4.5

Table 3

Percentages and Chi-square of Types of Barriers by Onset Categories

Barrier	Early Onset		Middle Onset		Adult Onset		X^2	p	Φ
	n	%	n	%	n	%			
Employer discrimination or negative attitudes	51	60.0	20	55.6	9	39.1	3.19	.20	.15
Lack of accommodations	45	52.9	14	38.9	8	34.8	3.52	.17	.16
Lack of transportation	39	45.8	14	38.9	13	56.5	1.76	.42	.11
Lack of jobs	42	49.4	14	38.9	7	30.4	3.11	.21	.15
Lack of jobs with adequate pay	33	38.8	10	27.8	7	30.4	1.58	.45	.10
Potential loss of disability benefits if employed	28	32.9	14	38.9	8	34.8	0.39	.82	.05
Low expectations of rehabilitation counselor	21	24.7	3	8.3	5	21.7	4.26	.12	.17
Difficulty with travel skills	18	21.2	6	16.7	5	21.7	0.36	.83	.05
Lack of needed vocational rehabilitation services	21	24.7	3	8.3	4	17.4	4.40	.11	.17
Disagreements with vocational rehabilitation counselor about vocational goals	18	21.2	5	13.9	1	4.4	3.96	.14	.17
Lack of skills or abilities to perform jobs	16	18.8	1	2.8	2	8.7	6.17	.04*	.21
Lack of knowledge about how to find a job	11	12.9	2	5.6	1	4.4	2.47	.29	.13
Need to care for family members (e.g., children or aging adults)	9	10.6	2	5.6	3	13.0	1.07	.58	.09
Other	4	4.7	2	5.6	1	4.4	0.06	.97	.02
Have not experienced any barriers	10	11.8	2	5.6	3	13.0	1.25	.54	.09

N = 144

*Indicates value from the Fisher's Exact Test